

SEED CRESTS AND MYRMECOPHILOUS DISSEMINATION
IN CERTAIN PLANTS.

A NUMBER of common plants have seeds with whitish fleshy appendages, varying in form and in the extent of attachment to the seed, but at most hardly forming more than a ridge on one side.

In those plants in which dissemination is effected by mammals or birds which swallow the fruit, the fleshy coat completely covers the seed, at least in the ordinary cases, and we would hardly expect these creatures to be attracted by appendages of the limited size of ordinary seed crests. On the other hand, there seems to be no improbability of their being attractive to ants, and they form a very convenient handle by which the ants may seize and carry away the seeds.

A long time ago I noticed that a follicle of *Sanguinaria Canadensis* had dropped its seeds in a cluster upon the ground. Returning to the spot a short time after I was surprised to find that all of the seeds were gone except one in the clutches of an ant which had already dragged it a few feet away. This case was reported verbally to Professor Trelease and was mentioned by him in a paper on myrmecophilism.¹ Since that time I have frequently exposed seeds of *Sanguinaria* in situations frequented by ants and have observed that these insects invariably seize the seeds and carry them away. On another occasion the contents of several fruits of *Sanguinaria Canadensis*, *Uvularia grandiflora*, and *Trillium recurvatum* were placed in a run frequented by *Formica fusca*, and it was observed that all of the seeds were carried away in about an hour.

The supposition that the plants depend upon the crests for dissemination is strengthened if it can be shown that they have no other means of seed dispersal. In *Sanguinaria* the follicles remain erect or fall over upon the ground. In either case the seeds are turned out upon the ground without being scattered. In *Erythronium albidum*, which has similarly crested seeds, the capsule bends the scape down so that, when it opens, the seeds roll out.

At first the case of *Uvularia grandiflora* seemed opposed to the supposition, for I was aware of the fact that, while the flowers were pendulous, the position of the capsules was different. This suggested the familiar case in which the flowers are pendulous, but the seeds are finally held in an upright basket where they are retained until a jost-

¹ Psyche —: 179. 1889.

ling of the plant is likely to throw them to a considerable distance. When this *Uvularia* is in bloom the leaves are flaccid and pendulous. Later, however, when the leaf through which the peduncle passes becomes rigid and horizontal, the stalk changes its position, but only enough to get out of the way of the leaf. At dehiscence the axis of the capsule is directed horizontally, its valves become strongly reflexed, and the seeds fall out upon the ground.—CHARLES ROBERTSON, *Carlinville, Ill.*